

# Claims

- [c1] 1. An internet-protocol (IP) phone with a built-in gateway, comprising:  
a built-in network gateway having an IP terminal, a plain old telephone service (POTS) terminal and a local telephone terminal, wherein a signal entering any one of the three terminals is permitted to convert and transmit to the other two terminals simultaneously.
- [c2] 2. A telephone network structure, comprising:  
at least one internet-protocol (IP) phone with a built-in gateway, wherein the IP phone with the built-in gateway has an IP terminal, a plain old telephone service (POTS) terminal and a local telephone terminal such that a signal entering any one of the three terminals is permitted to convert and transmit to the remaining terminals simultaneously,  
wherein the at least one IP phone with the built-in gateway connects together in series by the IP terminal and the POTS terminal to form a telephone network, and all of the IP phone with the built-in gateway server a function of telephone conference.
- [c3] 3. The telephone network structure of claim 2, wherein

the serially connected IP phones with the built-in gateway comprise at least a unit assembled from a pair of IP phones such that the POTS terminals are an internally connected point and the IP terminals are externally connected.

- [c4] 4. The telephone network structure of claim 3, wherein the internally connected point also connects with a local telephone.
- [c5] 5. The telephone network structure of claim 2, wherein both the front and the end terminals of the telephone network structure operate in an IP mode.
- [c6] 6. The telephone network structure of claim 2, wherein both the front and the end terminal of the telephone network structure operate in a POTS mode.
- [c7] 7. The telephone network structure of claim 2, wherein the front and the end terminal of the telephone network structure operates in a POTS mode and an IP mode respectively.
- [c8] 8. The telephone network structure of claim 2, wherein the IP phone with a built-in gateway processes voice signals.
- [c9] 9. The telephone network structure of claim 2, wherein

the IP phone with a built-in gateway processes both voice and video signals.

- [c10] 10. A telephone network system, comprising:  
at least an internet-protocol (IP) phone, wherein at least one of the IP phone has a built-in gateway providing an IP terminal, a plain old telephone service (POTS) terminal and a local telephone terminal such that a signal entering any one of the three terminals is permitted to convert and transmit to the remaining terminals simultaneously,  
wherein IP terminals or POTS terminals of two neighboring IP phones are serially connected together in the same mode to form a telephone network.
- [c11] 11. The telephone network system of claim 10, wherein the serially connected IP phones comprise at least a unit assembled from a pair of IP phones with the built-in gateway such that the POTS terminals are an internally connected point and the IP terminals are externally connected.
- [c12] 12. The telephone network system of claim 11, wherein the internally connected point also connects with a local telephone exchange system.
- [c13] 13. The telephone network system of claim 10, wherein

both the front and the end terminal of the telephone network operate in an IP mode.

[c14] 14. The telephone network system of claim 10, wherein both the front and the end terminal of the telephone network operate in a POTS mode.

[c15] 15. The telephone network system of claim 10, wherein the front and the end terminal of the telephone network operates in a POTS mode and an IP mode respectively.

[c16] 16. A multi-point conferencing system for conducting a communication session between a number of users simultaneously, comprising:  
at least an internet-protocol (IP) phone, wherein the IP phone has an IP terminal, a plain old telephone service (POTS) terminal and a local telephone terminal such that a signal entering any one of the three terminals is permitted to convert and transmit to the remaining terminals simultaneously and identical IP terminals or POTS terminals of neighboring IP phones are serially connected together to form a telephone network; and  
a plurality of conference participants using the telephone network to conduct a conference session.

[c17] 17. The multi-point conference system of claim 16, wherein at least one of the IP phones also connects with

another telephone.

- [c18] 18. The multi-point conference system of claim 16,  
wherein at least one of the IP phones also connects with  
a telephone exchange system.